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**Declarations under Rule 4.17:**

- as to the applicant's entitlement to claim the priority of the  
earlier application (Rule 4.17(iii)) for all designations
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8 July 2004

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ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.*

(54) Title: METHOD FOR DIAGNOSING TESTICULAR SEMINOMAS

(57) Abstract: Objective methods for detecting and diagnosing testicular seminoma (TS) are described herein. In one embodiment, the diagnostic method involves the determining a expression level of TS -associated gene that discriminate between TS and normal cell. The present invention further provides methods of screening for therapeutic agents useful in the treatment of TS, methods of treating TS and method of vaccinating a subject against TS.

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## INTERNATIONAL SEARCH REPORT

International Application No

PCT/JP 03/11711

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12Q1/68

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, BIOSIS, Sequence Search, EMBASE

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	SKOTHEIM ROLF I ET AL: "New insights into testicular germ cell tumorigenesis from gene expression profiling" CANCER RESEARCH, vol. 62, no. 8, 15 April 2002 (2002-04-15), pages 2359-2364, XP002266690 ISSN: 0008-5472	1,3,6-12
A	the whole document	2,13,14, 16-24, 26,27, 29,31, 33,34
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Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

## \* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the International filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&amp;" document member of the same patent family

Date of the actual completion of the international search

13 January 2004

Date of mailing of the international search report

19. 04. 2004

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## INTERNATIONAL SEARCH REPORT

International Application No

PCT/JP 03/11711

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	RUKSTALIS D B: "Molecular mechanisms of testicular carcinogenesis" WORLD JOURNAL OF UROLOGY, vol. 14, no. 5, 1996, pages 347-352, XP002266691 ISSN: 0724-4983	1,3,6-12
A	the whole document	2,13,14, 16-24, 26,27, 29,31, 33,34
A	----- DATABASE GENBANK [Online] Clone IMAGE: 1691709 XP002266692 Database accession no. AI141839  abstract -----	2,13,14, 16-24, 26,27, 29,31, 33,34

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/JP 03/11711

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:  
  
Although claims 23-30 are directed to methods of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound
2. ☒ Claims Nos.: 34  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:  
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:  
  
1-3, 6-14, 16-24, 26, 27, 29, 31, 33, 34 (all partially)

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 34

Claim 34 does not meet the requirements of Article 6 PCT in that the matter for which protection is sought is not defined. Said claim relates to a composition for treating or preventing TS, comprising a pharmaceutically effective amount of a compound, which compound has been defined by the method used to screen it, without providing any technical features defining such compound. Independent of the above reasoning, the claim lacks support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT. The claim covers all compounds having this desirable characteristic whereas the application does not provide support for them. In the present case, the lack of disclosure of the present application and the lack of clarity and support has rendered a meaningful search over the whole of the claimed scope impossible.

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.5), should the problems which led to the Article 17(2) declaration be overcome.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

~~This International Searching Authority found multiple (groups of)~~  
inventions in this international application, as follows:

1. claims: 1-3, 6-14, 16-24, 26, 27, 29, 31, 33, 34 (all partially)

Invention 1

Reference expression profile, kit and array comprising (a pattern of gene expression) of two or more genetic markers, wherein one is TS 1 genetic marker, or the polynucleotide corresponding to Accession No. AI141839; compositions comprising TS 1 genetic marker (or derivatives); and methods using TS 1 genetic marker

Inventions 2-170

Ibidem for inventions 2-170, wherein the genetic markers are TS 2 to TS 170, or the polynucleotides corresponding to the Accession Nos. X02994 to X12949, respectively (as listed in Table 3)

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2. claims: 1-3, 6-14, 16-24, 26, 27, 29, 31, 33, 34 (all partially), 25, 32, 35 (all completely)

Invention 171

Reference expression profile, kit and array comprising (a pattern of gene expression) of two or more genetic markers, wherein one is TS 171 genetic marker, or the polynucleotide corresponding to Accession No. NM 139176; compositions comprising TS 171 genetic marker (or derivatives); and methods using TS 171 genetic marker

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3. claims: 1-3, 6-14, 16-24, 26, 27, 29, 31, 33, 34 (all partially)

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Invention 172

Reference expression profile, kit and array comprising (a pattern of gene expression) of two or more genetic markers, wherein one is TS 172 genetic marker, or the polynucleotide corresponding to Accession No. AA921313; compositions comprising TS 172 genetic marker (or derivatives); and methods using TS 172 genetic marker

Inventions 173-346

Ibidem for inventions 173-346, wherein the genetic markers are TS 173 to TS 346, or the polynucleotides corresponding to the Accession Nos. L11566 to N34387, respectively (as listed in Table 3)

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4. claims: 1, 4-13, 15-22, 28, 29, 30, 34 (all partially)

Inventions 347

Reference expression profile, kit and array comprising (a pattern of gene expression) of two or more genetic markers, wherein one is TS 347 genetic marker, or the polynucleotide corresponding to Accession No. U57961; compositions comprising TS 347 genetic marker (or derivatives); and methods using TS 347 genetic marker

Inventions 348-939

Ibidem for inventions 348-939, wherein the genetic markers are TS 348 to TS 939, or the polynucleotides corresponding to the Accession Nos. M35296 to AI024879, respectively (as listed in Table 4)

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